

CLAIMS:

1. A system for locating an individual in a facility, the system comprising:

a portable wireless transponder device borne by the individual;

an interrogator; and

a plurality of antennas distributed in the facility, the antennas being selectively separately connected to the interrogator, the interrogator when connected to any of the antennas having a communications range covering less than the area of the entire facility, the interrogator repeatedly transmitting a wireless command to the portable wireless transponder device using alternating antennas, the portable wireless transponder device transmitting data identifying the portable wireless transponder device in response to a command if the portable wireless transponder device is within communications range of the antenna sending the command, wherein the individual is located by determining with which antenna the interrogator was able to establish communications with the portable wireless transponder device.

2. A system in accordance with claim 1 wherein the wireless transponder device comprises a remote intelligent communications device having an integrated circuit including a microprocessor, a transponder, and a memory.

1           3.     A system in accordance with claim 1 wherein the wireless  
2 transponder device comprises a radio frequency identification device which  
3 communicates at a microwave frequency.  
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5           4.     A system in accordance with claim 1 and further comprising an  
6 airline reservation system, and network connecting the interrogator to the airline  
7 reservation system.  
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9           5.     A system in accordance with claim 1, wherein the interrogator is  
10 sequentially connected to respective antennas, and makes at least one  
11 communication attempt using each antenna.  
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13           6.     A system in accordance with claim 1 wherein an area of  
14 communication is defined by the interrogator connected to an antenna, wherein the  
15 area of communication of the interrogator using one of the antennas overlaps with  
16 the area of communication of the interrogator using another one of the antennas.  
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1           7.     A system for locating equipment in a facility, the system comprising:  
2           a portable wireless transponder device borne by the individual;  
3           an interrogator; and  
4           a plurality of antennas distributed in the facility, the antennas being  
5           selectively separately connected to the interrogator, the interrogator when connected  
6           to any of the antennas having a communications range covering less than the area  
7           of the entire facility, the interrogator repeatedly transmitting a wireless command  
8           to the portable wireless transponder device using respective antennas, the portable  
9           wireless transponder device transmitting data identifying the portable wireless  
10          transponder device in response to a command if the portable wireless transponder  
11          device is within communications range of the antenna sending the command,  
12          wherein the individual is located by determining with which antenna the  
13          interrogator was able to establish communications with the portable wireless  
14          transponder device.

1           8.     An airline reservation system comprising:

2           a computer including a database storing information identifying passengers  
3     who have purchased tickets for a flight, information about scheduled departures  
4     for flights, and information identifying passengers who have checked in for a  
5     flight; and

6           a wireless transponder in communication with the computer, and an antenna  
7     coupled to the wireless transponder, the transponder periodically sending wireless  
8     commands requesting wireless responses from portable identification devices, the  
9     portable identification devices transmitting identifying data in response to receiving  
10    a command, the wireless transponder having a desired coverage area and  
11    communicating only with portable identification devices within the desired area,  
12    the computer modifying the database to indicate that a passenger has checked in  
13    in response to the wireless transponder receiving a response from a portable  
14    identification device, within a predetermined time period before a scheduled  
15    departure for the flight, which response includes identifying data for a passenger  
16    for whom the database indicates that a ticket for a flight has been purchased.

1           9.     A system in accordance with claim 8 and further comprising a  
2 portable identification device adapted to be borne by an individual, the portable  
3 identification device including a housing, and battery, a transponder, and a  
4 microprocessor in the housing, the housing having length and width dimensions  
5 no greater than standard length and width dimensions of a credit card.

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7           10.    A system in accordance with claim 8 and further comprising a  
8 portable identification device adapted to be borne by an individual, the portable  
9 identification device including an integrated circuit having a transponder, a  
10 microprocessor, and a memory, and the portable identification device  
11 communicating with the wireless transponder at a microwave frequency.

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13           11.    A system in accordance with claim 8 wherein the wireless  
14 transponder, when connected to the antenna, has a range configured so that the  
15 computer modifies the database to indicate that a passenger has checked in when  
16 the portable identification device enters the desired coverage area.

1           12. A system in accordance with claim 8 and further comprising a  
2 second antenna selectively alternately connected to the interrogator and configured  
3 to communicate with portable identification devices that have passed beyond a  
4 gate area indicating that the passenger has boarded a plane, and wherein the  
5 computer modifies the database to indicate that a passenger has boarded the plane  
6 when a portable identification device identifying a passenger passes beyond the  
7 gate area.

1           13. A system for communicating custom flight information to a  
2 passenger, the system comprising:

3           a computer including a database storing information identifying passengers  
4 who have purchased tickets for a flight, and information about scheduled  
5 departures for flights;

6           a monitor coupled to the computer; and

7           a wireless transponder in communication with the computer, and an antenna  
8 coupled to the wireless transponder, the wireless transponder periodically sending  
9 wireless commands requesting responses from portable identification devices, the  
10 portable identification devices transmitting wireless identifying data in response to  
11 receiving a command, the wireless transponder, when connected to the antenna,  
12 having a desired range for communicating only with portable identification devices  
13 within a desired distance from the antenna, the antenna being located proximate  
14 the monitor, the computer causing flight information about a passenger's flight to  
15 be displayed on the monitor in response to the wireless transponder receiving a  
16 response from a portable identification device using the antenna proximate the  
17 monitor.

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19           14. A system in accordance with claim 13 wherein the flight information  
20 stored in the database and shown on the monitor includes the passenger's name.  
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1           15.    A system in accordance with claim 13 wherein the flight information  
2 stored in the database and shown on the monitor includes the gate for the flight.

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4           16.    A system in accordance with claim 13 wherein if multiple passengers  
5 having portable identification devices are within the range, the computer causes  
6 the monitor to show flight information for each passenger, which the flight  
7 information for a passenger being shown adjacent the passenger's name.



1           17. A system for communicating custom flight information to a  
2 passenger, the system comprising:

3           a computer including a database storing information identifying passengers  
4 who have purchased tickets for a flight, and information about scheduled  
5 departures for flights;

6           a monitor coupled to the computer; and

7           a wireless transponder in communication with the computer and periodically  
8 sending wireless commands requesting wireless responses from portable  
9 identification devices, the portable identification devices transmitting identifying  
10 data in response to receiving a command, the wireless transponder having a  
11 desired range for communicating only with portable identification devices within  
12 a desired distance from the monitor, the computer causing flight information about  
13 a passenger's flight to be displayed on the monitor in response to the wireless  
14 transponder receiving a response from a portable identification device within the  
15 desired range.

1 18. A system for communicating custom flight information to a  
2 passenger, the system comprising:

3 a computer including a database storing information identifying passengers  
4 who have purchased tickets for a flight, and information about scheduled  
5 departures for flights;

6 a speaker coupled to the computer; and

7 a wireless transponder in communication with the computer, and an antenna  
8 coupled to the wireless transponder, the wireless transponder periodically sending  
9 wireless commands requesting responses from portable identification devices, the  
10 portable identification devices transmitting wireless identifying data in response to  
11 receiving a command, the wireless transponder, when connected to the antenna,  
12 having a desired range for communicating only with portable identification devices  
13 within a desired distance from the antenna, the antenna being located proximate  
14 the speaker, the computer causing flight information about a passenger's flight to  
15 be announced on the speaker in response to the wireless transponder receiving a  
16 response from a portable identification device using the antenna proximate the  
17 speaker.

1           19. A system for communicating custom flight information to a  
2 passenger, the system comprising:

3           a computer including a database storing information identifying passengers  
4 who have purchased tickets for a flight, and information about scheduled  
5 departures for flights;

6           an interrogator in communication with the computer;

7           a plurality of distributed antennas alternately in communication with the  
8 interrogator, the interrogator when in communication with one of the antennas  
9 sending wireless commands requesting wireless responses from portable  
10 identification devices; and

11           portable identification devices transmitting identifying data in response to  
12 receiving a command from an interrogator, and receiving flight information from  
13 the interrogator for a passenger identified by the identifying data, the portable  
14 identification devices respectively further including a display on which the flight  
15 information is displayed.

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17           20. A system in accordance with claim 19 wherein the portable  
18 identification devices include an actuator, and wherein the flight information is  
19 shown on the display in response to the actuator being pressed.

1           21. A method of locating an individual bearing a portable wireless  
2 identification device, in a facility where multiple individuals bear respective of the  
3 portable wireless devices, the method comprising:

4           providing a wireless interrogator;

5           distributing a plurality of antennas in the facility;

6           alternately connecting the interrogator to respective antennas, the interrogator  
7 when connected to an antenna having a range covering less than the area of the  
8 entire facility, the interrogator transmitting a wireless command with alternate  
9 antennas to the portable wireless transponder devices, the portable wireless  
10 transponder device transmitting data identifying its bearer in response to a identify  
11 command if the portable wireless transponder device is within communications  
12 range of an antenna;

13           storing in a memory the identifying data for responding portable wireless  
14 transponder devices and associating the identifying data with the particular antenna  
15 to which the transponder device responded;

16           searching the memory for identifying data for a particular individual being  
17 sought; and

18           determining the location of the particular individual based on which antenna  
19 was last used to communicate with the portable wireless transponder device borne  
20 by the particular individual.